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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/752,894	01/07/2004	Craig D. Tipton	3255R	4557

26645 7590 09/08/2006

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EXAMINER	
GOLOBOY, JAMES C	
ART UNIT	**PAPER NUMBER**
1714	

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/752,894	TIPTON ET AL.	
	Examiner	Art Unit	
	James Goloboy	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear how the weight ratio (a):(b) is to be calculated when both the phosphorus acid and the phosphorus ester components are present, as the word "or" implies that only one component is to be taken into account.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 9-11, 13-14, and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Rutkowski (U.S. Pat. No. 3,974,081).

In column 7 lines 46-59, Rutkowski discloses a lubricant composition comprising a phthalic ester (dihexyl phthalate), an aliphatic phosphorus ester (phosphosulfurized

terpene), a dispersant, and a lubricating base oil, as recited in Claim 1. The phosphorus ester is 0.3% by weight of the composition, falling within the range recited in Claim 9, the dispersant is a succinimide dispersant as in Claim 10, and is present in an amount of 2.0% by weight, within the range recited in Claim 11.

The composition disclosed in column 7 lines 46-59 is a fully formulated lubricant, as in Claim 14. Rutkowski also shows in column 7 lines 36-40 a compositions containing less of the base oil, which are suitable as concentrates, as recited in Claim 13.

In column 7 lines 43-44, Rutkowski refers to the lubricant composition as an automatic transmission fluid, implying that it may be used to lubricate a transmission, as in Claim 27. As the composition contains a corrosion inhibitor, and may be supplied in concentrated form, it inherently anticipates Claim 26 as well.

5. Claims 1-4, 10, 12, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lowe (U.S. Pat. No.4,088,587).

In column 14 lines 57-62, Lowe discloses a composition comprising an oil of lubricating viscosity, a succinimide dispersant (as recited in Claim 10), terephthalic acid (as recited in Claims 2 and 3), and tricresyl phosphate (a phosphorus ester). Terephthalic acid is present in the composition of Lowe in an amount of 0.1% by weight, falling within the range recited in Claim 4. The molecular weight of tricresyl phosphate is 368, so the composition contains 0.74% by weight of tricresyl phosphate (0.368 g/mmol * 20 mmol/kg = 7.36g/kg = 0.74%) The ratio of phthalic acid to phosphorus ester is

therefore, 0.14, falling within the range disclosed in Claim 12. The composition disclosed by Lowe therefore meets the limitations of Claims 1-4 and 10.

Lowe further teaches, in column 12 lines 33-35, that a detergent may be added to the lubricant compositions, as in Claim 15.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 2-4, 7, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotten (U.S. Pat. No. 3,992,307)

In column 13 lines 39 through column 14 lines 20, Hotten discloses compositions comprising an oil of lubricating viscosity, a succinimide dispersant, terephthalic acid,

and a zinc dihydrocarbyldithiophosphate, as well as other additives. The compositions disclosed by Hotten differ from that recited in Claims 1-3 because they contain a zinc dihydrocarbyldithiophosphate, which includes the zinc dialkyldithiophosphate species forbidden in Claim 1 as the phosphorus ester.

In column 1 lines 18-24, Hotten discloses a group of antiwear agents commonly used in the art. Among the possibilities is dialkyl phosphite, a phosphorus ester. If dialkyl phosphite is substituted for zinc dihydrocarbyldithiophosphate in the compositions disclosed by Hotten, the limitations of claims 1-3 and 7 are met. Hotten also discloses that the compositions contain 0.05% by weight of terephthalic acid, falling within the range recited in Claim 14. Hatten further teaches, in column 10 lines 68, that a detergent may be added to the lubricant compositions, as in Claim 15.

It would have been obvious to one of ordinary skill in the art to use a dialkyl phosphite instead of zinc dihydrocarbyldithiophosphate in the lubricant compositions of Hotten, as Hotten teaches that it is commonly used to provide equivalent functionality, and furthermore it would provide an ashless anti-wear agent. It would have been obvious to one of ordinary skill in the art to include a detergent, as taught by Hotten, as such additives are well known in the art to neutralize acidic combustion products.

9. Claims 5, 6, 12, 17-25, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotten in view of Suyama (U.S. Pat. No. 6,127,325).

The discussion of Hotten in paragraph 8 above is incorporated here by reference. The differences between Hotten and the currently presented Claims are:

i) Hotten does not disclose a composition containing a phosphorus acid or a salt thereof; however, Hotten does disclose in column 13 lines 44-45 that the lubricant composition may comprise 0.4% by weight of a rust inhibitor. This relates to Claims 5, 6, 12, 25, and 28.

ii) Hotten does not disclose a method for producing the lubricant composition.

With respect to i), Suyama, in column 12 lines 42-43, teaches that phosphoric acid salts are suitable rust inhibitors for use in lubricant compositions. The use of these phosphoric acid salts in the lubricant composition of Hotten meets the limitations of Claims 5, 6, and 28. As the ratio of terephthalic acid to rust inhibitor in the composition of Hotten is 0.125:1 (0.05 / 0.4 = 0.125), the composition also satisfies Claims 12 and 25. The Suyama also teaches in column 12 lines 38-39 the use of phosphoric acid esters as a lubricant additive; this encompasses a broader class of phosphorus esters than disclosed by Hotten.

It would have been obvious to one of ordinary skill in the art the use the phosphoric acid salts disclosed by Suyama as a rust inhibitor in the lubricant composition of Hotten in order to suppress the formation of rust on the surface of metallic parts, as taught in column 10 lines 54-58 of Hotten.

With respect to ii), the composition taught by Hotten in view of Suyama inherently teaches the method recited in Claims 17-24. If all the components of the composition taught by Hotten in view of Suyama were simply combined, a pre-reaction would occur between the terephthalic acid and the phosphorus ester without any special

manipulation. Evidence for this is found in Claim 23, which recites a reaction temperature of as low as 25°C, room temperature, for the pre-reaction.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hotten in view of Hasegawa (U.S. Pat. No. 6,153,118).

The discussions of Hotten in paragraphs 3 and 6 above are incorporated here by reference. Hotten discloses the dialkyl phosphite genus of anti-wear additives but not a specific species.

Hasegawa, in column 10 line 16, discloses dibutyl phosphite as a dialkyl phosphite suitable for use as anti-wear additives (column 9 lines 61-62).

It would have been obvious to one of ordinary skill in the art to use the dibutyl phosphite taught by Hasegawa as the dialkyl phosphite in the composition of Hotten, due to its utility as an anti-wear agent.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rutkowski in view of Horodysky (U.S. Pat. No. 4,522,734).

The discussion of Rutkowski in paragraph 2 above is incorporated here by reference. Rutkowski discloses in column 7 line 27 that the composition may comprise a friction modifier, but does not disclose specific friction modifiers.

In the abstract, Horodysky teaches that borate esters of hydrolyzed hydrocarbyl alkoxides are effective friction modifiers, and further teaches in column 1 lines 44-54 that these borate esters provide advantages over non-borated friction modifiers.

It would have been obvious to one of ordinary skill in the art to utilize the borate esters taught by Horodysky as friction modifiers in the composition of Rutkowski, in order to take advantage of the anti-oxidation and high-temperature properties possessed by those esters, as taught in column 1 lines 44-54 of Horodysky.

12. Claims 17-18, 21, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowe in view of either Fetterman (U.S. Pat. No. 5,320,765) or Rutkowski.

The discussion of Lowe in paragraph 5 above and the discussion of Rutkowski in paragraph 4 above is incorporated here by reference. Lowe discloses a composition comprising a terephthalic acid, a phosphorus ester, a dispersant, a detergent, and an oil of lubricating viscosity, but does not provide a method for preparing such a composition.

The key step in preparing the composition of Lowe is the solubilization of the terephthalic acid. Fetterman, in column 31 lines 47-49, discloses a terephthalate lubricant additive, and in column 31 lines 4-8 teaches that it is oil soluble. Based on the teachings of Fetterman, it would have been obvious to one of ordinary skill in the art to use the acidolysis reaction between the terephthalic acid and phosphorus ester to convert the acid to an oil-soluble terephthalate. There also would be no need to pre-react the terephthalic acid with a dispersant, thus meeting the requirement of Claim 21. Therefore, the method of producing the composition of Lowe by the methods recited in Claims 17-18, 21, and 24 is rendered obvious.

Alternatively, Rutkowski discloses in column 3 line 67 through column 4 line 11 that a broad range of esters of polycarboxylic acids, including terephthalic acid (column 4 line 9) are oil-soluble and suitable as additives in a lubricant composition. Although Rutkowski teaches that the esters are made from the reaction of a polycarboxylic acid and an alcohol, it is well known in the art that identical products can be obtained from the reaction of a polycarboxylic acid and an ester, in the present case terephthalic acid and a phosphorus ester, as recited in Claims 17-18, 21, and 24. It would have been obvious to one of ordinary skill in the art to convert the terephthalic acid to a soluble terephthalate, based on the teaching of Rutkowski.

The cumulative evidence provided by Fetterman and Rutkowski establishes that the use of terephthalates as an oil-soluble additive is well-known, and that formation of said terephthalates by the pre-reaction of terephthalic acid and another reagent would be obvious to one of ordinary skill in the art.

13. Claims 19, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotten in view of Suyama, and further in view of either Fetterman or Rutkowski.

The discussion of Hotten in view of Suyama in paragraph 9 above and the discussion of Rutkowski in paragraph 4 above are incorporated here by reference. Hotten in view of Suyama discloses a composition comprising a terephthalic acid, a phosphorus ester, a phosphorus acid, a dispersant, and an oil of lubricating viscosity,

where the weight ratio of the terephthalic acid to phosphorus compounds is within the range recited in Claim 22.

The key step in preparing the composition of Hotten in view of Suyama is the solubilization of the terephthalic acid. Fetterman, in column 31 lines 47-49, discloses a terephthalate lubricant additive, and in column 31 lines 4-8 teaches that it is oil soluble. Based on the teachings of Fetterman, it would have been obvious to one of ordinary skill in the art to use the acidolysis reaction between the terephthalic acid and phosphorus ester to convert the acid to an oil-soluble terephthalate. The subsequent addition of phosphoric acid is obvious, as case law holds that the selection of any order of mixing ingredients is *prima facie* obvious. *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

Alternatively, Rutkowski discloses in column 3 line 67 through column 4 line 11 that a broad range of esters of polycarboxylic acids, including terephthalic acid (column 4 line 9) are oil-soluble and suitable as additives in a lubricant composition. Although Rutkowski teaches that the esters are made from the reaction of a polycarboxylic acid and an alcohol, it is well known in the art that identical products can be obtained from the reaction of a polycarboxylic acid and an ester, in the present case terephthalic acid and a phosphorus ester, as recited in Claims 19-20 and 22. It would have been obvious to one of ordinary skill in the art to convert the terephthalic acid to a soluble terephthalate, based on the teaching of Rutkowski.

The cumulative evidence provided by Fetterman and Rutkowski establishes that the use of terephthalates as an oil-soluble additive is well-known, and that formation of

said terephthalates by the pre-reaction of terephthalic acid and another reagent would be obvious to one of ordinary skill in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Goloboy whose telephone number is 571-272-2476. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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